

2005-2006 Season

Overall Lab Surveillance

Total Specimens Collected

- Collected in Week 41: **2**
- Season Total: **22**

Newly identified influenza

Newly identified; Cumulative

- Influenza A: **0;0**
- Influenza B: **0;0**

Newly subtyped influenza

Newly identified; Cumulative

- Influenza A/H3N2: **0;0**
- Influenza B/HongKong: **0;0**
- Influenza B/Shanghai: **0;0**

Sentinel Site Lab Surveillance

Total Specimens Collected

- Collected in Week 41: **1**
- Season Total: **11**

Newly identified influenza

Newly identified; Cumulative

- Influenza A: **0;0**
- Influenza B: **0;0**

Newly subtyped influenza

Newly identified; Cumulative

- Influenza A/H3N2: **0;0**
- Influenza B/HongKong: **0;0**
- Influenza B/Shanghai: **0;0**

Research Lab Surveillance

Total Specimens Collected

- Season: **1**
- Influenza A: **0**
- Influenza B: **0**
- Influenza A/H3N2: **0;0**
- Influenza B/HongKong: **0;0**
- Influenza B/Shanghai: **0;0**

Contents

Processing Methods	2
Laboratory Surveillance	2
Sentinel Site Surveillance	3
Questionnaire Summary	4
Overseas Research Laboratory Surveillance	4
WHO/CDC Influenza Surveillance	5
SIDR/SADR Surveillance	5,6
Influenza News	6
Vaccine Composition	6

DoD Global Influenza Surveillance Program: *Influenza Surveillance at AFIOH*

Week 41

9 - 15 October 2005

DoD-GEIS Influenza Surveillance System Network

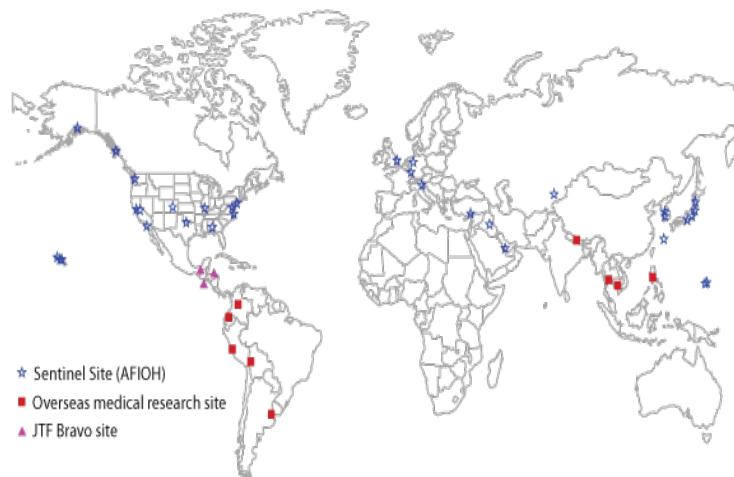
The DoD Global Influenza Surveillance Program was established by the Global Emerging Infections Surveillance and Response System (GEIS) in 1997. It involves a unique network of influenza surveillance efforts from the Air Force Institute for Operational Health (AFIOH), the Naval Health Research Center (NHRC), and the DoD overseas medical research facilities (i.e., the Naval Medical Research Unit located in Cairo, Egypt [NAMRU-2], the Naval Medical Research Unit located in Jakarta, Indonesia [NAMRU-3]).

AFIOH Influenza Surveillance Network

The influenza program at AFIOH includes global influenza surveillance among DoD beneficiaries at 38 tri-service sentinel sites (including deployed locations in Iraq, Qatar, and Kyrgyzstan), several non-sentinel sites, and two DoD overseas medical research laboratories (i.e., the Armed Forces Research Institute of Medical Sciences located in Bangkok, Thailand [AFRIMS], and the U.S. Naval Medical Research Institute Detachment [NAMRID] located in Lima, Peru) that collect specimens from local residents in Nepal, Thailand, Argentina, Bolivia, Ecuador, Peru, and Colombia. New to our surveillance efforts this season is the addition of the Joint Task Force (JTF) Bravo, in partnership with the US Army Center for Health Promotion and Preventive Medicine-West (CHPPM-W), that will collect specimens from local residents in El Salvador, Guatemala, and Honduras.

AFIOH Sentinel Sites and Overseas Research Laboratories

2005-2006 Season



AFIOH Reporting Procedures

The information in this report describes:

- 1) **Overall Laboratory Surveillance** (i.e., all respiratory specimens submitted to and processed by the AFIOH laboratory);
- 2) **Sentinel Site Laboratory Surveillance** (i.e., respiratory specimens submitted by the sentinel sites using the protocol of selecting 6-10 influenza-like illness [ILI] specimens per week); and
- 3) **Overseas Research Laboratory Surveillance** (i.e., respiratory specimens submitted by two of the DoD overseas medical research laboratories [AFRIMS and NMRC-D] and the JTF Bravo sites).

Please visit the [DoD-GEIS website](#) for an overview of influenza surveillance at all collaborating centers.

Processing Methods

The AFIOH Surveillance Division Laboratory is accredited by the College of American Pathologists (CAP) and is a World Health Organization (WHO) Collaborating Laboratory. It is the central viral laboratory for the DoD Global Influenza Surveillance Program and the main reference laboratory for the Air Force. Thus, the laboratory serves a dual purpose as both a diagnostic laboratory (i.e., for sites ordering respiratory tests on specimens for patient management) and a surveillance laboratory (i.e., for sentinel sites participating in the influenza surveillance program).

Specimens are processed in BSL-2 conditions (BSL-3 available) and tested for influenza, parainfluenza, adenovirus, enterovirus, herpes simplex virus (HSV), and respiratory syncytial virus (RSV). Specimens are held up to 14 days before a negative result is given. All influenza isolates are typed as A or B and a portion are subtyped using hemagglutination-inhibition (HI) or polymerase chain reaction (PCR) procedures. A portion of these isolates undergo molecular sequencing.

Overall Laboratory Surveillance

Laboratory surveillance describes all specimens submitted to the AFIOH laboratory for respiratory testing (i.e., from sentinel sites, non-sentinel sites, and overseas laboratories).

Sites submitting specimens for respiratory testing

At this time, the AFIOH laboratory has received specimens collected during **Week 41** from a total of **2** sites (one sentinel and one JTF Bravo site).

Season submission: Forty-eight percent (n=10) of the submitting sites were sentinel sites, 48% (n=10) were non-sentinel sites, and 4% (n=1) was an overseas research laboratory site (please see map to the right).

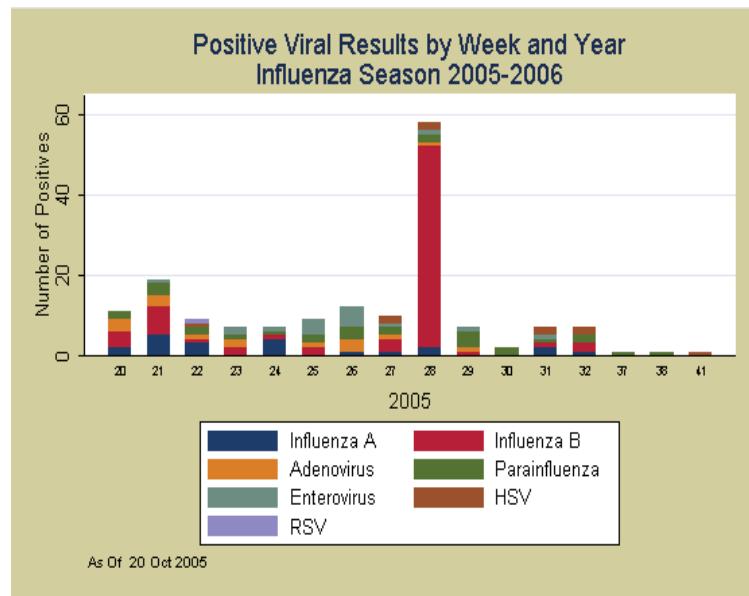
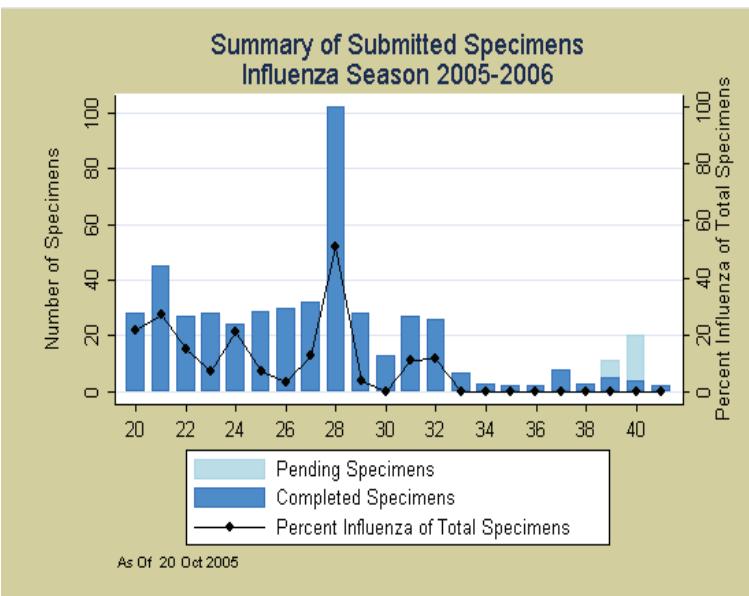


Overall Laboratory Results

Week 41 overview. Two specimens were collected during Week 41 and received by the AFIOH laboratory. One specimen was negative and one was processed as positive for a respiratory virus (herpes simplex virus [HSV]).

Season overview: Since 02 October 2005, a total of 22 specimens were collected and 27% (n=6) have been processed to date. Eighty-three percent (n=5) of the specimens processed were negative, while 17% (n=1) was positive for a respiratory virus (HSV). Please see the graphs below.

Subtyping: No data to report.



Sentinel Site Laboratory Surveillance

Sentinel site surveillance describes specimens submitted by the 38 sentinel sites using the protocol of collecting 6-10 specimens each week from patients meeting the ILI case definition (**fever $\geq 100.5^{\circ}\text{F}$ and cough or sore throat**) and completing the "Influenza Surveillance Questionnaire" (see "Sentinel Site Lab Surveillance, page 4"). Two sentinel sites, Tripler Army Medical Center (AMC), located in Hawaii, and Landstuhl Regional Medical Center (RMC), located in Germany, send selected influenza positive specimens to AFIOH to be further characterized. These sites are major medical centers and have established laboratories capable of detecting influenza. Their involvement in the DoD-wide program is valued due to their mission and geographical location.

Sites submitting specimens for respiratory testing

At this time, the AFIOH laboratory has received specimens collected during **Week 41** from **1** sentinel site (see map).

Season Regional Overview. Since 02 October 2005, we have received specimens collected by sentinel sites from the East North Central (78%) and East South Central (22%) regions.



ESSENCE Overview. AFIOH reviewed ILI activity in the Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE) and observed ILI activity at all sentinel sites during Week 41. This does not indicate that all patients met the ILI case definition (i.e., fever $\geq 100^{\circ}\text{F}$ and cough or sore throat); however, an abundance of ILI activity is a good indicator that enough patients met the case definition for inclusion in the program. Detailed site-specific ESSENCE data can be viewed in the "AFIOH Sentinel Site Report" (see website).

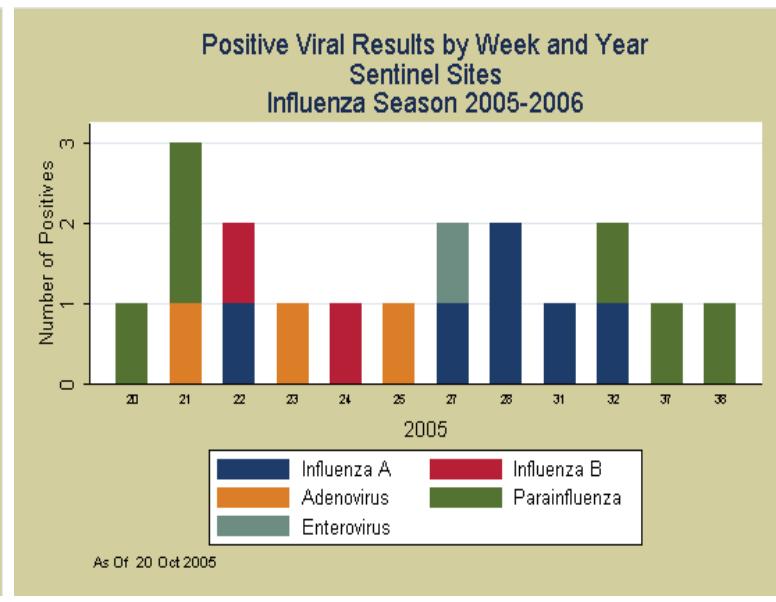
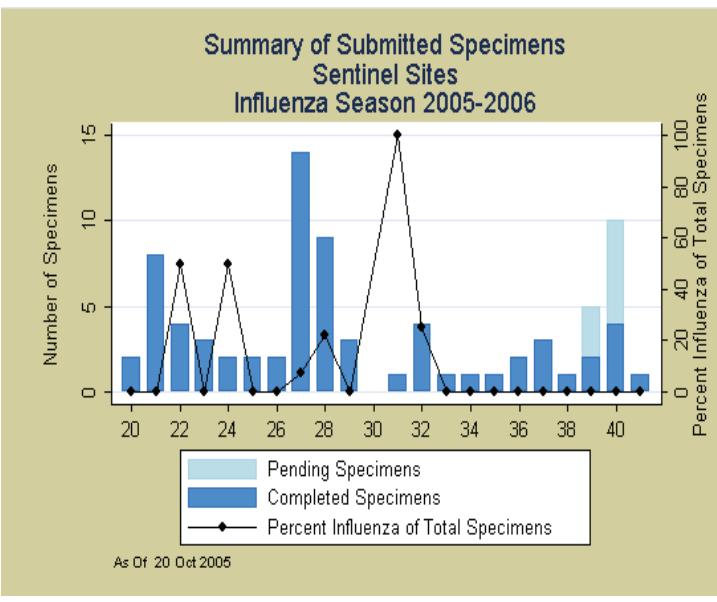
Actions Taken: AFIOH has continued the efforts in requesting sentinel sites to comply with the surveillance protocol.

Sentinel Site Laboratory Results

Week 41 overview. One specimen was collected during Week 41 and received by the AFIOH laboratory.

Season overview: Since 02 October 2005, a total of 11 specimens were collected and 45% (n=5) have been processed to date. All (n=5) of the specimens processed were negative.

Subtyping: No data to report.



Influenza Surveillance Questionnaire

The "Influenza Surveillance Questionnaire" is requested from each sentinel site that submits a respiratory specimen to this Program. As of 19 October 2005, a total of 8 questionnaires have been submitted online (from specimens collected during Weeks 40-42). We anticipate linking this data with the laboratory results when a sufficient amount of data is supplied.

At this time, we will supply a brief description of the questionnaires entered:

ILI case definition. Seven (88%) of the patients met the ILI case definition.

Vaccine. Three (40%) of the patients received the influenza vaccine *less than two weeks ago* (also stationed at deployed sites).

Quarters. Four (50%) of the patients were placed on quarters from (1 for 24hrs, 2 for 48 hrs, and 1 for 60 hrs).

Travel history. One (13%) patient traveled within the past month.

Overseas Medical Research Laboratory Surveillance

The overseas medical research laboratory surveillance describes all specimens submitted by one of the DoD overseas medical research laboratories and the JTF Bravo sites. Specimens are batched for shipments and therefore we do not receive specimens on a weekly or monthly basis.



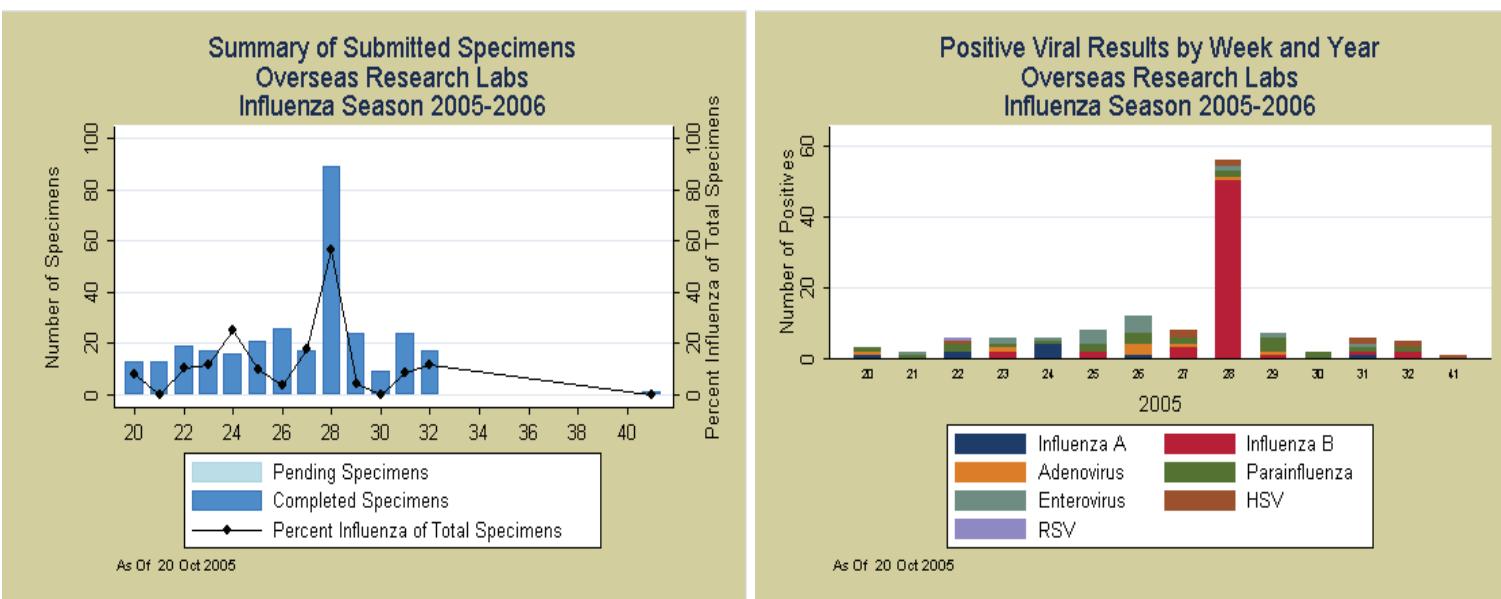
Sites submitting specimens for respiratory testing

Season submission. Since 02 October 2005, the AFIOH laboratory received specimens from one JTF Bravo site that collected specimens from local residents in Honduras.

Laboratory Results

Season overview: Since 02 October 2005, 1 specimen was collected and was positive for a respiratory virus (HSV).

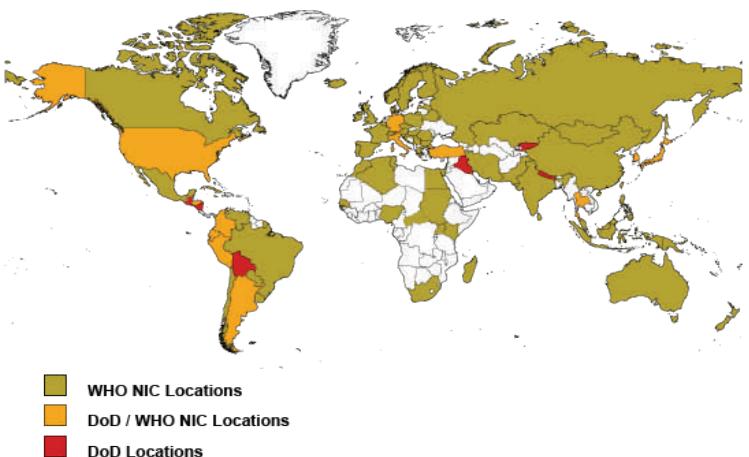
Subtyping: No data to report.



Contributions to National and Global Influenza Surveillance

The map to the right provides an illustration of how AFIOH data augments the current influenza surveillance network. **It is important to note that although a country is highlighted, surveillance may be limited in scope.** WHO has 113 National Influenza Centers (NIC) located in 87 countries. AFIOH provides influenza surveillance data from 21 countries - 8 countries (Bolivia, El Salvador, Guatemala, Iraq, Kyrgyzstan, Nepal, Nicaragua, and Qatar) are not otherwise included in the current WHO network.

Please note: This map describes the countries submitting specimens to AFIOH and does not include all DoD contributing countries (i.e., NAMRU-2 and NAMRU-3 surveillance described on page 1).



Data Sharing

Each week, AFIOH electronically reports de-identified program data to CDC using the Public Health Laboratory Information System (PHLIS). On 19 October 2005, AFIOH reported **5** (*5 for the 2005-2006 Season*) completed respiratory specimen data to CDC for use in WHO's global influenza surveillance and CDC's United States influenza surveillance.

Surveillance findings

Week 40: CDC reported a low level of influenza activity in the US (0.3% of specimens were positive for influenza). One percent of patient visits to US sentinel providers were due to ILI (below the national baseline of 2.2%). WHO reported a total of 10 influenza isolates: 3 in Mexico, 5 in China, and 2 in Chile.

Detailed WHO and/or CDC Influenza Surveillance Information:

National Influenza Activity (**CDC**): <http://www.cdc.gov/ncidod/diseases/flu/weeklychoice.htm>

International Influenza Activity (**WHO**): <http://www.who.int/GlobalAtlas/DataQuery/home.asp>

SIDR Surveillance

Influenza-like Illness Hospitalization Surveillance at Air Force Facilities

The Standard In-Patient Data Registry (SIDR) captures in-patient hospitalization data via CHCS from all DoD military treatment facilities. The SIDR database is updated monthly. AFIOH reviews a list of ILI ICD-9 codes captured in the first 4 diagnoses for a hospitalized patient.

September Surveillance. At Air Force facilities, there were a total of 48 patients hospitalized with ILI.

Age

The majority (75%) of the hospitalized patients were age 25-91, while 17% were age 0-4 and 8% were age 5-6.

Military Status

Fifty-two percent of the patients were active duty military members, while 44% were dependants (spouse/children), and 4% were civilian emergencies.

Diagnosis

Ninety-eight percent (n=47) had unspecified pneumonia (ICD-9 code 486.0) listed in one of the first 4 diagnosis categories (52% were in the first diagnosis category).

Hospital Stay

The total number of days a patient with ILI stayed in the hospital ranged from 1-12 days, with the majority (40%) staying 2 days. This data is similar when reviewing the active duty patients separately (i.e., hospital stay ranged from 1-12 days, 40% stayed 2 days). Children aged 0-4 stayed in the hospital from 2-4 days. Children aged 5-6 stayed in the hospital from 2-9 days.

Sites

Thirty-five percent (n=17) of the hospitalized patients were from 8 of the Air Force Sentinel Sites (2 located in Europe and 6 located in PACAF).

SADR Surveillance

Influenza-like Illness Ambulatory Surveillance at Air Force Facilities

The Standard Ambulatory Data Registry (SADR) captures ambulatory data via CHCS from all DoD military treatment facilities. The SADR database is updated weekly. AFIOH reviews a list of ILI ICD-9 codes captured in the first 4 diagnoses for patients seeking ambulatory care.

Week 41 Surveillance. At Air Force facilities, there were a total of 650 patients with ILI seeking ambulatory care.

Age

The majority (64%) of the patients were age 18-86, 19% were age 5-17, and 17% were age 0-4.

Military Status

The majority (66%) of the patients were dependants (spouse/children), while the active duty patients accounted for 34% of the visits.

Diagnosis

The two main diagnoses listed in the first 4 ICD-9 categories were unspecified pneumonia (51%) and unspecified bronchitis (46%).

Hospital Stay

Insufficient data.

Sites

Eighteen percent (n=117) of the patients were from 13 of the Air Force Sentinel Sites.

AFIOH is currently working on producing baseline data for both SIDR and SADR information. We anticipate including this in the upcoming reports.

Influenza News

Influenza Outbreaks

US Army Medical Research Unit—Kenya (USAMRU-K):

Preliminary data

In late July, USAMRU-K, one of the DoD overseas medical research laboratories, led a respiratory outbreak investigation that occurred among school-aged children in Kombwea, Kenya. Preliminary data from Kenya Medical Research Institute (KEMRI) showed 7 of 7 specimens as B/Shanghai/361/2002-like, the strain also included in this season's influenza vaccine and recommended for the Southern Hemisphere (2005) vaccine. Confirmatory testing at CDC shows closer similarity to B/Florida/07/2004, which was not recommended for the 2005-2006 vaccines.

CDC will provide a detailed report on their confirmatory testing soon.

Avian Influenza Updates

Tracking

- **Human Cases:** From Nov 26, 2003 to Oct 10, 2005 there were 117 cases of avian influenza (H5N1) confirmed by WHO. The case fatality rate was 51.3%. The majority of cases were from Viet Nam, but cases also occurred in Indonesia, Cambodia, and Thailand. Thailand has not reported any cases in the last year. Reference: http://www.who.int/csr/disease/avian_influenza/country/en/
- **Avian Cases:** On Oct 17, 2005, Greece was the 27th nation to report H5N1 in their bird populations. At least one turkey from the Island of Chios was confirmed to have died from the virus. More serious outbreaks have been reported. Most recently China reported the death of 2600 birds on a poultry farm in China's northern region of Inner Mongolia. For more details on avian cases, please visit: http://www.oie.int/eng/en_index.htm

2005-2006 Trivalent Influenza Vaccine Composition**Northern Hemisphere**

- A/New Caledonia/20/99-like (H1N1)
- A/California/7/2004-like (H3N2)
- B/Shanghai/361/2002-like

Southern Hemisphere (WHO recommendations)

- A/New Caledonia/20/99-like (H1N1)
- A/Wellington/1/2004-like (H3N2)
- B/Shanghai/361/2002-

This report was prepared on 20 October 2005. For an expanded view of the information in this report, visit our website at <https://gumbo.brooks.af.mil/pestilence/Influenza/>.

**AFIOH Contact Information**

Public Health services: Phone (210) 536-3471; DSN 240-3471

Laboratory Services: Phone (210) 536-8383; DSN 240-8383

E-mail: influenza@brooks.af.mil

